Listing of Claims

1. (Currently Amended) An apparatus for managing power in a computer system, the apparatus comprising:

an operation system configured to set up a power mode of the computer system, wherein the power mode includes at least one of an operating mode or ~~and~~ a reduced power ~~down~~ mode;

at least one device configured to perform specific functions and operations;

at least one device driver configured to control operations of the ~~on a~~ ~~corresponding~~ device, wherein the device driver is configured to change a ~~the~~ power mode of the ~~corresponding~~ device among the at least one of the operating mode and the reduced power ~~down~~ mode; and

a filter driver coupled to the operation system, wherein the filter driver is configured to generate a signal to cause the device driver to individually change the power mode of the ~~control a selected~~ device to operate in the reduced power ~~down~~ mode when the computer system is in the operating mode, the filter driver generating said signal by:

detecting that the device is in an idle state,

after said detecting, determining an accumulated amount of time the device has been in the idle state,

comparing the accumulated amount of time to a predetermined time, and

based on a result of said comparison, controlling the device to operate in the reduced power mode independently from the computer system continuing in the operating mode.

2. (Canceled)

3. (Original) The apparatus according to claim 1, wherein the filter driver monitors transceived packets between the operation system and the device driver and detects each device in the idle state.

4. (Currently Amended) The apparatus according to claim 1, wherein the filter driver generates and outputs a FIRP (False I/O request packet) configured to change the power mode of the ~~corresponding~~ device from the operating mode to the reduced power ~~down~~ mode.

5. (Currently Amended) The apparatus according to claim 1, wherein the device ~~devices~~ and the device driver comprise a sound card and a sound driver respectively.

6. (Currently Amended) A method, comprising:

operating a computer system in first and second power modes;

operating devices in the computer system in the first or ~~and~~ the second power modes; and

changing a power mode of one of the ~~controlling a selected~~ devices from the first power mode to ~~in~~ the second power mode when the computer system is in the first power mode, said changing including:

detecting that the device is in an idle state,

after said detecting, determining an accumulated amount of time the device has been in the idle state,

comparing the accumulated amount of time to a prescribed amount of time, and

based on a result of said comparison, changing the device to operate in the second power mode independently from the computer system continuing in the first power mode.

7. (Original) The method according to claim 6, wherein the first power mode is an operating mode and the second power mode is a power down mode.

8-9 (Canceled)

10. (Currently Amended) The method according to claim 6 ~~8~~, wherein the detecting ~~step~~ comprises:

monitoring transceived packets between an operation system in the computer

system and device drivers; and

detecting the idle state of the devices.

11. (Currently Amended) The method according to claim 6 ~~8~~, wherein the changing comprises:

generating a control message at a ~~the~~ filter driver; and

transferring the control message to the ~~a corresponding~~ device.

12. (Currently Amended) The method according to claim 6 ~~8~~, wherein the changing ~~step~~ comprises:

generating a False I/O request packet (FIRP) similar to an I/O request packet of the computer system at a ~~the~~ filter driver when the accumulated amount of ~~counted idle~~ time is greater than the prescribed amount; and

transferring the FIRP to the corresponding device.

13. (Currently Amended) The method according to claim 6 ~~8~~, wherein the changing ~~step~~ comprises operating the device in the first power ~~operating~~ mode if the accumulated ~~idle~~ time ~~that has been counted~~ is not greater than the prescribed amount.

14. (Currently Amended) The method of claim 6 ~~8~~, wherein the prescribed amount has a first timeout value in a battery mode, a second timeout value in a performance mode, and the prescribed amount varies according to an object device, and wherein the prescribed amount or said at least one device is set by a user or preset.

15. (Currently Amended) The method according to claim 6, wherein the changing comprises ~~controlling comprising~~:

generating, at an operation system, a power control message corresponding to the system power mode and outputting the power control message to the ~~a corresponding~~ device;

changing or determining a power state of the ~~corresponding~~ device to set up desired power states according to a kind of the power control message; and

dispatching the computer system based on a new power status.

16. (Currently Amended) The method according to claim 6, wherein the changing ~~controlling step~~ comprises independently controlling two of the ~~a plurality of~~ devices ~~or each of the devices~~ to operate in the second power mode when the computer system is in the first power mode.

17. (Currently Amended) A method for managing power in a computer system, the method comprising:

detecting at least one device that is in the idle state when a power mode of the computer system is in an operating mode;

determining idle time of the device ~~detected devices~~ in the idle state; and

changing a power mode of the ~~a corresponding~~ device from the operating mode to a power down mode when the idle state is not reset for a predetermined time.

18. (Original) The method according to claim 17, wherein a power manager provides a timer for checking respective devices in the idle state and managing power, and a filter driver changes a state of the devices after the predetermined time lapses.

19. (Original) The method according to claim 18, wherein the predetermined time has a first timeout value in a battery mode, a second timeout value in a performance mode, and the predetermined time varies according to an object device, and wherein the predetermined time or said at least one device is set by a user or preset.

20. (Original) The method according to claim 18, wherein when a device is operated a corresponding timer is reinitialized using the power manager.

21. (Currently Amended) A method for managing power in a computer system, comprising:

setting up a power state of a corresponding device to a power down state;

transferring a power control message, for changing the corresponding device to an operating state, to a device driver before ~~transferring a message~~ packet data from an operation system received for the corresponding device is transferred to the device driver;

transferring the packet data ~~received message~~ to the device driver after the corresponding device is changed to the operating state; and

setting the corresponding device to the power down state after the device driver completes handling the message, the method further comprising:

receiving a plurality of messages,

storing the plurality of messages in a queue, and

controlling a power mode of the device based a state of the queue, said controlling including powering up the corresponding device when a first message is output from the queue and powering down the corresponding device when a last message is output from the queue and the queue is empty.

22-23 (Canceled)

24. (Currently Amended) The method according to claim 21 ~~23~~, comprising:

if an IRP is received from an IO manager in a Kernal mode, executing at least one ~~dispatching a routine by~~ dispatch routine to receive different ~~routines and receiving all~~ kinds of packets; and

checking whether the received IRP is a power IRP, and

if the received IRP is not a power IRP and ~~but~~ an internal variable Suspend flag = a predetermined value θ, placing a packet in the queue for normal filter driver operations.

25. (Currently Amended) The method according to claim 21, further comprising:

if a packet enters into the [[a]] queue, automatically dispatching a routine for the corresponding ~~an associated first~~ device;

powering up the ~~first~~ device if the ~~first~~ device has been in the power down mode;

transferring one packet from the queue to an associated next device driver; and

completing the ~~a~~ routine if the queue is empty, and if the routine is not dispatched again until a first timer is timeout, transferring at power manager, a power down IRP to the ~~first~~ device to change the ~~first~~ device to the power down mode.

26. (Currently Amended) The method according to claim 25, wherein, if the ~~first~~ device is being used, resetting the first timer to prevent the first device from being in the power

down mode.

27. (Original) The method according to claim 25, wherein the packet is given a lower priority in an operation system and thus dispatched after packets with higher priorities are first treated by the operation system, making the queue loaded with a plurality of packet IRPs.

28. (Currently Amended) The method according to claim 27, further comprising:

if a received packet is a power IRP, checking whether the received packet is a system power IRP for changing the power state of the computer system;.

if the received packet is the system power IRP, checking whether the received packet is S0 being a new state among IRP data;

if the received packet is not S0, setting an interval variable to Suspend flag = [[1]] a predetermined value since the computer system is now entering in the power down mode, and blocking any additional IRP to enter to the queue; and

clearing all IRPs currently remaining in the queue.

29. (Original) The method according to claim 25, further comprising:

if a received packet is a power IRP, checking whether the received packet is a system power IRP for changing a power state of the system; and

if the received packet is the system power IRP, proceeding to a next device driver.

30. (Currently Amended) The method according to claim 29 [[30]], further comprising:

if the received packet is the power IRP, checking whether the received packet is the system power IRP for changing the power state of the system;

if the received packet is the system power IRP, checking whether the received packet is S0 being a new state among IRP data; and

setting an internal variable to Suspend flag =[[0]] a predetermined value since the system is being enabled if the received packet is S0.

31-33 (Canceled)

34. (New) The apparatus according to claim 1, wherein the reduced power mode is one of a standby mode, a suspend mode, or a power down mode.